

IN THE SPECIFICATION:

Please amend the specification by replacing paragraphs as follows:

A. Specification Paragraphs With Mark-ups to Show Changes Made

The following are mark-ups to show changes made to paragraphs 0005 - 0008:

[0005] FIGS. 1A and 1B illustrate related art polarization beam converters, FIG. 2 illustrates operation of the polarization beam [sprite] split array in FIG. 1A, FIGS. 3A and 3B illustrate details of the polarization beam sprite array in FIG. 1A, FIG. 4 illustrates a light source with a parabolic reflector, FIG. 5 illustrates a light source with an elliptic reflector, and FIG. 6 illustrates a beam distribution of beams focused by the lens array in FIG. 1A.

[0006] Referring to FIGS. 1A and 1B, the related art polarization beam converter is provided with a first lens array 2, a second lens array 4, and a polarization beam [sprite] split array 6 facing an optical output surface of the second lens array 4.

[0007] The first lens array 2, or the second lens array 4 focuses white beams of lights inclusive of P wave and S wave onto a plurality of focusing points. As shown in FIG. 6, light beams 15 pass through the lens array shown in FIG. 1A. To do this, the first, or second lens array 2, or 4 has a matrix of a plurality of lenses.

[0008] In the meantime, the polarization beam [sprite] split array 6 transmits an 'S' wave, and converts a 'P' wave into 'S' wave and transmits the converted 'S' wave among the beams from the second lens array 4. To do this, the polarization beam [sprite] split array 6 has polarization beam split planes 10 and polarization beam reflection planes 12, both sloped with

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respect to an optical input surface and an optical output surface as shown in FIG. 2, and half wavelength plates 8 attached to the optical output surface.

The following are mark-ups to show changes made to paragraph 0010:

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[0010] That is, the entire beams of lights inclusive of the P wave and the S wave passed through the polarization beam [sprite] split array 6 are converted into the S wave. The polarization beam [sprite] split array 6 has two parts to be symmetric with respect to a center part 14 thereof as shown in FIG. 3A.

The following are mark-ups to show changes made to paragraph 0014:

Q3
[0014] On the other hand, the lamp 20 with an elliptic reflector 22 directs the beams of lights such that the beams are focused at a plane in front of the lamp [34] 20. Accordingly, the elliptic reflector 22 is required to have a slope greater than the parabolic reflector 16 so that the beams from the lamp 20 are focused on the plane in front of the lamp 20. That is, because the lamp 20 with the elliptic reflector 22 can reflect more beams, the lamp 20 with the elliptic reflector 22 has an optical efficiency higher than the lamp 18 with the parabolic reflector 16.

The following are mark-ups to show changes made to paragraph 0016:

Q4
[0016] Moreover, there are no beams incident on a center part of the related art polarization beam [sprite] split array 6. That is, the beams from the first lens array 2 and the

second lens array 4 are incident on the polarization beam [sprite] split array 6 in symmetry with respect to a center part 14 thereof. Consequently, no beams pass through the center part 14 of the related art polarization beam [sprite] split array 6. Accordingly, there has been a problem in that a uniformity of the beams becomes poorer even if a position of the polarization beam [sprite] split array 6 is changed, slightly.

The following are mark-ups to show changes made to paragraph 0024:

[0024] In another aspect of the present invention, there is provided a projector including a light source for emitting beams of lights, a rod lens for receiving the beams of lights from the light source and making a distribution of the beams uniform, and a polarization beam converter for receiving the beams from the rod lens. The polarization beam converter has a lens part for receiving the beams from the rod lens and focusing onto a plurality of focusing points, and a polarization beam [sprite] split array receives the beams inclusive of a P wave and an S wave, and forwards the P wave as it is, and converting the P wave into the S wave before forwarding.

The following are mark-ups to show changes made to paragraph 0026:

[0026] The accompanying drawings, which are included to provide a further understanding of the invention and are incorporated in and constitute a part of this specification, illustrate embodiments of the invention and together with the description serve to explain the principles of the invention:

In the drawings:

FIGS. 1A and 1B illustrate related art polarization beam converters;

FIG. 2 illustrates operation of the polarization beam [sprite] split array in FIG. 1A,

FIGS. 3A and 3B illustrate details of the polarization beam [sprite] split array in FIG. 1A;

FIG. 4 illustrates a light source with a parabolic reflector;

FIG. 5 illustrates a light source with an elliptic reflector;

FIG. 6 illustrates a beam distribution of beams focused by the lens array in FIG. 1A;

FIGS. 7A and 7B illustrate polarization beam converters in accordance with a preferred embodiment of the present invention;

FIG. 8 illustrates a detail of operation of the rod lens shown in FIG. 7A;

FIG. 9 illustrates distribution of beams focused by the illumination lenses in FIG. 7A;

FIG. 10 illustrates a detail of operation of the polarization beam [sprite] split array in FIG. 7A; and,

FIG. 11 illustrates a diagram of an optical system in which a polarization beam converter is arranged to provide a P wave at a final stage.

The following are mark-ups to show changes made to paragraphs 0028 - 0030:

[0028] FIGS. 7A and 7B illustrate polarization beam converters in accordance with a preferred embodiment of the present invention, FIG. 8 illustrates a detail of operation of the rod lens shown in FIG. 7A, FIG. 9 illustrates distribution of beams focused by the illumination

lenses in FIG. 7A, and FIG. 10 illustrates a detail of operation of the polarization beam [sprite] split array in FIG. 7A.

[0029] Referring to FIGS. 7A and 7B, the projector in accordance with a preferred embodiment of the present invention includes a rod lens 24, a first illumination lens 26 and a second illumination lens 28 for focusing beams from the rod lens 24 at a particular location, and a polarization beam [sprite] split array 30 facing an optical output surface of the second illumination lens 28. The first illumination lens 26, the second illumination lens 28, and the polarization beam [sprite] split array 30 facing the optical output surface of the second illumination lens 28 compose a polarization beam converter.

[0030] In the unexplained reference symbols in FIGS. 7A and 7B, 32 denotes a reflection planes, 38 denotes center parts of the first illumination lens 26 and the second illumination lens 28, and 40 denotes a center part of the polarization beam [sprite] split array 30.

The following are mark-ups to show changes made to paragraph 0030:

[0033] In the meantime, referring to FIG. [6] 2, beams incident on the polarization beam [sprite] split array 30 are split into preset groups. To do this, the optical output surface 36 of the rod lens 24 is required to have an area equal to, or smaller than an area of the optical input surface 34. In other words, the following equation (1) should be satisfied:

$$\text{area of optical input surface} \geq \text{area of optical output surface} \text{ ----- (1)}$$

The following are mark-ups to show changes made to paragraph 0035-0038:

[0035] Referring to FIG. 9, the beams from the first illumination lens 26 and the second illumination lens 28 are symmetric with respect to center parts 38 of the first illumination lens 26 and the second illumination lens 28, with large quantities of the beams concentrated on the center parts 38. Accordingly, the deterioration of the beam uniformity caused by fine movement of the first illumination lens 26, the second illumination lens 28, and/or the polarization beam [sprite] split array 30 can be prevented.

[0036] In the meantime, since the beams from the second illumination lens 28 are incident on the center part 40 of the polarization beam [sprite] split array 30, the center part 40 of the polarization beam [sprite] split array 30 has a configuration as shown in FIG. 10.

[0037] Referring to FIG. 10, the center part 40 of the polarization beam [sprite] split array 30 has polarization beam split planes 42 and polarization beam reflection planes both sloped with respect to the optical input surface and the optical output surface of the polarization beam [sprite] split array 30, and a half wavelength plate 32 attached to the optical output surface of the polarization beam split plane 42.

[0038] The polarization beam [sprite] split array 30 is symmetric with respect to the center part 40, with two polarization beam split planes 42 forming a triangular section in the center part 40. The polarization beam split planes 42 receives the white beams from the second illumination lens 28, and transmits only P wave and reflects S wave. The P wave transmitted the polarization beam split planes 42 is converted into the S wave by the half wavelength plate 32,

and forwarded. On the other hand, the S wave reflected at the polarization split planes 42 is reflected at the reflection surface 44, and forwarded as it is. That is, all the white beams inclusive of the P wave and S wave passed through the polarization beam [spite] split array 30 are converted into S wave.

The following are mark-ups to show changes made to paragraph 0044:

[0044] As has been explained, the projector of the present invention permits to fabricate a thinner projector because the lamp with the elliptic reflector can be employed in place of the lamp with the parabolic reflector in the related art. Also, the employment of the lamp with the elliptic reflector, a color wheel can be employed without addition of an optical system. The color wheel is fitted between the light source and the rod lens, for splitting at least on color beam from the beams. Also, the focusing of the beams only by using the illumination lens instead of the related art lens array onto the polarization beam [sprite] split array minimizes the light loss.
